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A
Compleat and Effectual
METHOD
OF
TANNING
WITHOUT
BARK:

Experienc'd and fully prov'd to be more Expeditious, and much Cheaper, than with it.

K. Noble (Ch.)

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a.3659.

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The Publiſher's PREFACE.

T*HE Countenance the Parliament of* Ireland *have given to the following Book, by voting it's Author an immediate Reward, and promiſing him a further, has render'd it conſiderable enough not only to excuſe the Publication here, but to give ſome hopes of it's being receiv'd as a uſeful Deſign. I can't ſay how far the Project is improvable with us, but I am aſſur'd that ſuch a Thing was propos'd to ſome of our Tanners (and approv'd) ſeveral Years ago, by a Gentleman ſince deceas'd, whoſe Papers I am in hopes of procuring, ſhould any other ingenious Perſon think fit to Communicate their Thoughts on this Subject. This whole Scheme ſtands as calculated for* Ireland; *therefore Allowances muſt be made for ſome different Circumſtances: I thought it proper to give it ſo, that we might ſee what induces that Nation to favour it; leaving the Reader to judge, whether the Arguments for carrying on* their *Manufactures in the cheapeſt manner, for retrieving* their ruinous *Trade, and the other Reaſons mention'd in this Piece, may not be applicable to* us, *and tend to remove any Obſtacles that lie in the way: ſeeing we have plenty of the ſame Vegetables our Author preſcribes, and other things, perhaps, that will anſwer the ſame End.*

TO HIS EXCELLENCY
WILLIAM CONOLLY, Eſq;
SPEAKER
OF THE
Houſe of Commons of *Ireland*,
And to the Reſt of the
MEMBERS of that HOUSE,
THIS
METHOD
OF
TANNING without BARK,
Is humbly inſcribed
By Their moſt
Obedient Servant,

William Maple.

AN
Effectual, Expeditious and Cheap
METHOD of TANNING
WITHOUT
BARK.

IN Political Computations, the following Principles are univerſally allow'd:

THAT the Riches of every Country ariſe from the Natural Produce of the Earth; and the Labour and Art, employed in improving the ſame.

THAT the Quantity of Native Commodities, the Scource of Riches, is in Proportion to the Number of People, fully and uſefully employed.

THAT every induſtrious Perſon adds to the Wealth, and Support of a Nation; and every Idler, detracts from both, by living on the Labour of Others.

THAT it is the beſt Policy in any Government, to encourage, and provide for the full Employment of the People; ſince thereby, the Number, Wealth, Strength, and Quiet of the Inhabitants are increaſed.

THAT the Gain, or Loſs of any Nation by Trade, is known, and determined by the Proportion, which the Exports bear in Value to the Imports. On this depends the abſolute Quantity of Money in a Nation; the Relative Quantity of the ſeveral Species, that compoſeth this Money, being aſcertained by the Value impoſed on thoſe Species, either as it agrees with, or differs from the Value ſet thereon by other Nations.

A Nation certainly loſes by a Trade, whoſe Exports are not compleatly manufactured,

tured, and whoſe Imports are fully wrought.

A few Manufactures will ſerve to exchange for great Quantities of the ſimple Produce of the Earth. The Value of Manufactures, being principally owing to Labour and Art.

IF upon theſe Principles, we examine the State of the Trade of *Ireland*; I fear we ſhall find it, in a very declining, and ruinous Condition.

OUR Exportations are made up of Wool, Worſted, Linnen, Yarn, Beef, Butter, Cheeſe, Tallow, Hydes, Skins, and a few other Articles.

WE are not allowed to export our Wool and Woorſted, but to a few Ports in *England*, and are prohibited from ſending thither, or any where elſe, any other of our Woollen Manufacture. Linnen, and ſome tanned Hydes are the only Commodities we export, compleatly Manufactured; Yarn and Woorſted may be accounted but as half-wrought; Almoſt all the other Articles are but little removed from the State, Nature has given them to us, and have little or no Labour or Art employed about them.

AT the ſame time, we export ſo liberally the Growth of our Country, and ſo little of our Manufactures, we may obſerve all our Importations are of ſuch Commodities, as are not capable of farther Improvement; ſuch as *Eaſt-Indian* and *Weſt-Indian* Goods, Druggs, Wines, Spirits, Manufactures of Wool, Silk, Linnen, Iron, Braſs, Glaſs, *&c.* Nay, the common Produce of almoſt all Countries, as Corn, Timber, and Firing, are imported in great Quantities to ſupply our Neceſſities.

BY this Management of our Trade, we maintain many Thouſands in foreign Countries, and drive Numbers of our own People from us, or leave them to ſtarve at home, for Want of Employment.

IF to this View, we add that mighty Drain of our Bullion, made by thoſe Gentlemen, who, having great Eſtates in this Kingdom, chooſe to ſpend them any where, rather than at home; We cannot be at a Loſs, how to account for the Ballance of Trade, running againſt us, for ſo many Years paſt.

THE moſt certain Way left to retrieve

our Affairs, is to leſſen our Imports, and to encreaſe our Exports, eſpecially of Manufactures.

THE Commiſſioners of the Linnen Manufacture, by an unwearied Application and uncommon Skill, have contributed greatly to the value of our Exports, by the Advancement of the Linnen Manufactory. And I don't doubt but that in ſeveral other Articles, divers Expedients and Means may be thought of, for promoting a greater Conſumption of our Own, and leſſening that of Foreign Commodities; and as one Inſtance, I ſhall beg Leave to propoſe an Improvement in our Tannage, by which I apprehend, we ſhall be enabled to Tan with the Produce of our own Country, all the Hydes that now are Exported Raw; and thereby increaſe the Value of our Exports, employ many Thouſands of our People, and avoid the Neceſſity of Importing Bark.

TO ſet this Matter in a clear Light. I ſhall lay down in the firſt Place, the Export of Green Hydes, and the Import of Bark, in the ſeven following Years, for the Whole Kingdom, as the ſame has been extracted out of the Cuſtom-Houſe Books.

Years.	*GreenHydes.*	*Bark, Barrels.*
1721	46,847	46,556
1722	86,004	45,794½
1723	123,514	47,824½
1724	103,477	60,740½
1725	69,858	48,407
1726	60,441	45,279
1727	57,373	50,588

IN the next Place it is to be obſerv'd,

THAT Bark, according to its Goodneſs, is ſold from 6 to 10, and in ſome Years, 11 Shillings the Barrel.

THAT Cow-Hydes weigh from 56, to 84 Pounds each; Bullocks Hydes weigh from 84 to 140 Pounds each, and both are ſold from 15 to 21 Shillings the hundred Weight.

THAT Soles are generally ſold from 8 to 8 Pence half-penny the Pound.

THAT Hydes generally loſe about half their Weight in Tanning.

FROM theſe Principles, when thrown into mean Proportionate Quantities, it is evident:

THAT the Quantity of Bark, annually imported, is 50,000 Barrels, and the Value 21,000 Pounds.

THAT the Number of Green Hydes annually exported, are 80,000 and their Value 57,000 Pounds.

THAT if theſe Green Hydes were tanned before Exportation, their Value would be 123,000 Pounds.

THAT the Difference ariſing from the Different State of theſe Hydes on Exportation, is 66,000 Pounds, which Sum added to the 21,000 Pounds, the Value of the imported Bark, making in the whole 87,000 Pounds, muſt be accounted as ſo much gained to the Kingdom, ſhould our Tannage be effected by our own Produce and Labour.

THE Nations that demand this Export of thoſe Green Hydes, are thoſe, whoſe black Cattle are not bred in ſuch Numbers, as to ſupply their indiſpenſable Demands; Nor will their dry Hydes, which they receive from their Settlements abroad, admit a thorough Tannage; They in hopes of putting their Neighbours who have a Redundancy of Hydes, under a Neceſſity, of parting with them unmanufactured, have prohibited, by the ſevereſt Penalties, the ſending us any Bark: While we on the other Part, have not only complied with this detrimental Export; but alſo have been ſo regardleſs of our own Intereſt, as to permit ſeveral Tanners, ſome from this City, to go and inſtruct them in an Art, they almoſt were Strangers to.

THE *Engliſh*, from a true Senſe of the Diſadvantage of ſuch a Trade, have ſubjected the Exporter of a Green Hyde, to the Penalties of 500 Pounds, and a Diſability to trade in Leather ever after. *Ann.* 14. *Car.* II.

SUCH an Act, even in our preſent Circumſtances, may by ſome be thought adviſeable for us; becauſe ſuch Nations as now gladly receive our Green Hydes, finding a Stop put to their uſual Supplies, would be under a Neceſſity of receiving our tanned Hydes, and ſelling us their Bark. For Leather is a Commodity, that does not depend on the Fancy; but is abſolutely requiſite, not only to the Luxuries, but alſo to the Neceſſities of Mankind.

AT preſent our Tanners find a great Scarcity of Bark (except thoſe reſiding in ſome conſiderable Sea-Port-Town) and are under juſt Apprehenſions of a greater. Several in the Country have been obliged to lay aſide their Pits, and take to other Employments, the uſual Supplies failing. Our Neighbours who will permit any Bark to be ſent us, are in a Manner exhauſted. Our *American* Plantations are too remote to find their Account, in ſending any great Quantity. The Produce of our Country is ſcarce a twentieth Part of what is uſed in Tanning. This renders our Tannage dear, and often imperfect, ſo as not to ſerve a foreign Market, to Advantage and Reputation.

BUT, if we had Materials of our own Growth, eaſy of Acquiſition, and Propagation, which would Tan in every Reſpect as well as Bark; were theſe Materials, as to their Powers well aſcertain'd and confirm'd by a general Experience, the making an Act to prohibit the Exportation of Green Hydes, would be judged by all to be Adviſeable and Uſeful to the Kingdom.

WHEN the apparent Qualities of Bark are conſidered; and that by it's inſinuating into the Pores, and incorporating with the Subſtance of the Hyde, it produces a Firmneſs, Strength, and Conſolidation of the Parts; it is very ſurprizing that other Materials of the ſame Apparent Qualities, have ſo long remained neglected, and unapplied to the ſame Uſes; when the Conſequence is of ſuch Moment.

Tormentil and *Cinquefoil* Roots, are ranged in the ſame Medical Claſs; have the ſame apparent Qualities; eſpecially the firſt, in a more eminent and evident Degree, than Bark it ſelf.

ON Tryal they have anſwered beyond Expectation: The *Cinquefoil* did not give ſo good a Colour as the *Tormentil*, which in all Reſpects, as to Colour, Bloom, Subſtance, Solidity, and Weight, in the Tanned Hyde, compleatly anſwered, and in much leſs Time than when Bark (even of the beſt Kind, or Growth) is uſed.

THO' what is here aſſerted, is grounded on ſeveral Years Experience, and confirmed by the Opinion and Teſtimony of Mr. *Philip Cooley* Tanner, who from the beginning hath been concerned in the ſeveral Tryals, and to whoſe Skill and Induſtry a Part of the Subſequent is owing; Yet to give the utmoſt Satisfaction, and as I think my ſelf in the ſtrongeſt Manner bound, by the Encouragement hitherto given me by the *Houſe of Commons*, to render the beſt Information I am able, in an Affair of ſome Conſequence to the Publick, I ſhall give a moſt faithful Account of the Progreſs that has been made, and the Succeſs that hath attended this Way of Tanning, with relation to the Goodneſs of the Leather, the Time, and Charge of Tanning, and other Circumſtances; and ſhall add ſeveral Obſervations, with Directions for finding and propagating theſe Roots, in great plenty, that all Perſons may be encouraged to carry this Method of Tanning into a general Practice, which as it will be for their private Advantage, ſo it will not fail to promote the Publick Benefit.

IN Order to this, I ſhall in the firſt Place beg Leave to place this Affair in the Light it appeared in before the *Committee* of the *Houſe of Commons* of *Ireland*, to whom my Petition was referred by the *Houſe*; in which Petition it was alledged, that I had eſtabliſhed a Method of Tanning without the Uſe of any Barks, to as great Perfection, cheaper, and in leſs Time, than with

Bark, by Vegetables of our Natural Produce, and of eaſy Culture.

THE *Committee* were pleaſed for their greater Satisfaction, to ſummon a Great Number of Tanners, Curriers, Shoemakers, and others to attend, to give their Teſtimony in relation to the ſeveral Specimens, and Proofs, that were to be laid before them.

IN reſpect to the Goodneſs of the Leather ſo Tanned, the following Specimens were exhibited :

N°. 1. A Calve's Skin from the Ooze.

N°. 2. A Calve's Skin uncurried.

N°. 3. A Calve's Skin curried : each of theſe, when tanned and dryed, weighing about three Pounds.

N°. 4. A Calve's Skin very ſtrong and large, when tanned and dryed, weighing about ſix Pounds.

N°. 5. Seven or Eight Pair of Soles, of a Calve's Skin rais'd.

N°. 6. A bend of a Bullock's Hyde for Harneſs.

THESE were all proved by *Thomas Cooley* and *Patrick Shale* to be tanned without Bark, and with the Roots.

MR. *Henderſon*, Maſter of the Tanners, ſaid he was diffident of the Goodneſs of the Specimens; that he ſhould have been thoroughly ſatisfyed, had he known how the Leathers had proved, if worn by ſome Porters, or Chairmen; that the Colour of Number 2, or 3, was not ſo good as ſome tanned with Bark, producing a Calve's Skin curried, to compare with them, but did own, all the Specimens were thoroughly ſtruck, and well tanned: That if they were in a Shop intermixt with Skins tanned by Bark, he could not diſtinguiſh them; and that what tanned Numb. 5, and 6, would tan, Time and Quantity allowed, the thickeſt Bullock's Hyde.

MR. *Dobſon*, Tanner, affirmed the Specimens were not well tanned, becauſe they did not come up to the Colour of the Skin produced by Mr. *Henderſon*, but in other Reſpects, the Leathers appeared to be as good in their reſpective Kinds, as any tanned with Bark.

MR. *Nicholas Gibton*, Maſter of the Curriers, affirmed, that the Skin produced by Mr. *Henderſon*, was of an Extraordinary Colour; that there were not ten ſuch in *Dublin*; that the Difference in Colour was but very ſmall, and in regard even to Colour, he would chuſe thoſe tanned by the Vegetables, as ſoon as Mr. *Henderſon*'s Skin; that all the Specimens appeared to be very well tanned, and that he could in no wiſe diſtinguiſh them from Bark-Tannage.

MR. *Devereux*, Currier, being ſent out, returned, producing two Calves Skins tanned by Bark, which he took indifferently, and without chooſing, from the next Currier's Shop. They were allowed by all to be of a general or common Colour; and being compared were much exceeded by the Specimens, and particularly as to Colour.

MR. *Edmund Sheild*, Currier, ſaid he never ſaw better tanned Leather than the Specimens, that their Colour was very good and that what tanned Numb. 5. would tann any Hyde whatſoever.

Mr. *Brookfield*, Tanner, reported, the Specimens exhibited, were well tanned and thoroughly ſtruck; that neither he, or any other could diſtinguiſh them from Bark Tannage; and that what tanned Numb. 5, could not fail in any Tannage.

Mr. *Veckers*, Tanner, allowed the Specimens to be very well tanned; and gave it as his Opinion, that what tanned Numb. 5 and 6, would tann the thickeſt Sole Leather.

Mr. *John Gades* Shoemaker, after giving his Teſtimony, that all the Specimens appeared to be exceedingly well tanned, produced a Shoe made by him, of the Leather of this Tannage, affirming the Leather wrought very well, and that the Soles exhibited under the Hammer, all the Signs of extraordinary Leather.

Mr. *Ellis*, Shoemaker, reported the Specimens were very well tanned: That Leather either dead, or highly tanned, would never carry ſo beautiful a Colour as Leather otherwiſe tanned: That the Sole Leather appeared to be very well tanned; and that in his Opinion this Tannage, would, in every reſpect, anſwer the ſame End or Intentions, as Bark Tannage.

Mr. *James King*, Shoemaker, ſaid all the Specimens were effectually tanned.

Mr. *Richard Norris*, Shoemaker, produced a Sole of this Tannage, beaten; aſſerting he never ſaw ſo good a Sole of rais'd Calve's Skin; that it beat firm, ſolid, and without ſpreading, or Fuzzineſs, which are the diſtinguiſhing Characters of good Sole Leather: he deſired it might be cut in ſeveral Places, that the Cloſeneſs, and Firmneſs might be view'd, which accordingly was done, and anſwering Expectation was approved.

THERE were a great many other Tanners, Curriers, and Shoemakers, who were of the ſame Opinion. But conſidering their Teſtimonies, would be but ſo many Repetitions; I ſhall not recite them.

DR. *Richard Helſham*, Profeſſer of Natural Philoſophy in *Trinity College*, ſaid I had communicated to him what was uſed in this Tannage, which appeared to be well adapted to tanning, and would not fail to give a ſufficient Strength and Rigidity to the Fibres; adding, he wore a pair of Shoes, the Upper Leathers of this Tannage, daily for four Months, and being willing to try the utmoſt of the Leather, had new Soles put to them; that ſince he had worn them about a Month: ſhowing them, without any Cracks or Defect.

Patrick Carrol produced two Slips of curried Calf Skin; the one tanned by Bark, the other by the Roots, each three tenths of an Inch broad, and ten Inches long; the firſt was the thickeſt, and weighed a tenth Part more than the other. He ſaid, he was preſent with ſeveral others when it broke, by a Weight of 129 Pounds being hung to it; that the Slip of this new Tannage being tryed with the ſame Circumſtances, bore 29 Pounds more than the 129 Pounds, before it either yielded or broke.

IN reſpect to Time.

THAT the Specimens, N°. 1, 2 and 3 were tanned in five Weeks, N°. 4 in nine Weeks, N°. 5 in four Months, without any Hurry, extraordinary, or illegal Methods: was proved by Mr. *Thomas Cooley*, and *Patrick Shale*. On the other Side, it appeared, that in tanning with Bark, from three to five Months, were required for

Calves Skins, from ſeven to nine, were requiſite for Soles of rais'd Calves Skins, and from ten to thirteen Months, for Bullocks Hydes, which by this Tannage may be effected in nine or ten.

IN regard to Cheapneſs,

Mr. *Philip Cooley* affirmed, that ſix Pounds of the Dry Roots, added to ſome old expended Ooze, tanned Six Calves Skins, three of which were produced under the N°. 1, 2 and 3, and that he believed ſixteen Pounds would have done as much from the firſt, or without any old Ooze.

IN relation to the Cheapneſs:

PART of the Roots I have uſed, I purchaſed at three Farthings the Pound; but of late Years, and being willing to engage the Privacy of the Gatherer; I have given a Penny; they loſe about a third in Drying. Allowing theſe as Facts, and taking it at the deareſt, leſs than five Shillings worth of Roots, will go farther, than a Barrel of the beſt Bark.

AS to their Plenty and Propagation, Dr. *Helſham* teſtified, they grew in great Plenty as he had obſerved in ſeveral Counties of this Kingdom, and were very eaſily propagated.

DR. *William Stephens*, Botanic Profeſſor in *Trinity College Dublin*, in his Examination, declared, that they grew in great Plenty about *Dublin*, and in ſeveral Counties he had obſerved great Quantities, chiefly on Mountains, and barren Places: that they were eaſily to be propagated, in almoſt any kind of Soil, and that he had ſome flouriſhing in the Phyſick Garden, belonging to the Univerſity.

THE Reſolutions that the *Houſe* entred into *January* 10, might very well have ſufficed to have recommended a General Practice: But to remove ſome Prejudices and to obviate ſome falſe Repreſentations, I have impartially recited the ſeveral Facts and Teſtimonies, on which they were founded.

THAT all People may eaſily know and find out theſe Plants, I ſhall here give a Deſcription; which though tedious, I hope will be excuſed.

Cinquefoil, in *Latin*, *Pentaphyllum vulgare*, in *Iriſh*, *Tuigheag*, or *Tuigvear Muirre*;

and in ſome Counties, *Meagigh*; is a Plant, whoſe Roots are very long, about a Finger's Thickneſs, of a dark brown or reddiſh Colour, and very aſtringent in Taſte; the Leaves are born at the Extremity of a ſmall Stem, five together, deeply indented on their Edges, of an oblong Form and hairy; on the Grand Stem, at the Nodes ſhoot forth ſeveral ſmaller, terminating with a ſmall Yellow Flower, compoſed of ſix ſmall Leaves ſurrounding a Number of Threads, from whence ariſeth a Cluſter of Seeds.

IT flouriſhes in every Hedge, ſandy, looſe and deep Soil: the Roots which are to be preferred, are the thick, long, and of the darkeſt Colour.

Tormentil, or *Septfoil*, in *Weſt Meath*, called *Neaubnadis*; in *Ulſter*, *Menedin*, or *Neauknid*; in *Connaught*, *Levenet*; in the County of *Mayo*, *Fenede na Muc*: this Plant, hath a thick tuberous Root, of a reddiſh brown Colour, ſometimes covered with a black Skin, of a very aſtringent Taſte, and ſhooting out many Fibres; the Leaves are generally ſeven, ſet on the Extremity of a Foot Stalk, of a dark Green Colour, deeply indented on the Edges and hairy,

hairy; from amidſt them ariſeth ſeveral ſmall weak Stalks, of a reddiſh Colour, and hairy, about 12 or 18 Inches in Height, knotted; at every Knot, or Joint, is a Foliage, and two or three Foot Stalks, ſome bearing Leaves, and one longer than the reſt the Flowers conſiſting of four Leaves, of a light Yellow Colour, to which ſucceed the Seeds; the Flower Cup hath Eight Leaves, four large and four ſmall, the Root when Vigorous ſends forth ſeveral Runners, the Stalks of which are of a reddiſh Colour, and hairy, that ſpread over the Ground; at every Joint, from one Part ariſeth two or three Stems, each bearing at the Extremity five Leaves; from the other Part, deſcend ſeveral Fibres which become Roots.

IT grows almoſt every where, but chiefly delights in mountainy, barren and ſhallow Soils; the Roots ſeldom ſtriking four or five Inches deep It hath been obſerved by Dr. *Stephens*, to grow all along the Banks of the *Doder*, from *Donore-Brook* to *Old Baun*, upon *Roch Town* Hills; it grows on the Borders of a great Bog for ſeveral Miles, by *Rathmullian* in the County of *Meath*. In the County of *Wicklow*, Thouſands of Cart-Loads might be with Eaſe collected; Nor do I know a Mountain or Bog without Plenty of it.

IT is obſervable, that from the Bark of the Stalk of this Plant, at its breaking forth from the Root, excrementitious Tubercles or Knots, reſembling Oak-Galls, have been often diſcovered, and like them are ſubſervient to the Propagation of Inſects; which, conſidering the extream nice, and diſtinguiſhing Taſte of thoſe Animalculas, may be well allowed as a Proof, that their Juices are ſimilar,

THE Roots growing on Mountains are ſmall, ſtrong, and often have a black Coat; thoſe that grow on the Sides of Loughs, and in Bogs, are large, of a lighter Colour; ſome I have had of the latter, that have weighed each above half a Pound.

WHEN you chooſe the Roots, prefer the large knotty Roots, which when broken exhibit a blood red Tincture, intermixt with the brown, and thoſe that when cut, leave on the Knife a ſtrong purple Colour.

THE beſt Time for collecting theſe Roots is in the Winter Seaſon, or early in the

Spring, and tho' the Seed-bearing Stalks, and Foliage are decayed, yet there are ſeveral Foot Leaves, which remain and direct the Inquirer.

AND tho' theſe Plants grow wild all over the Country in ſuch Plenty, as to be more than ſufficient to tann all the Hydes and Skins of the Kingdom; and little Apprehenſion of a Deficiency, for in digging up the Roots, there will be left ſome broken Parts, ſome Fibres, which will Vegetate and give a Supply. A common Root, on a moderate Computation, will produce 8 or 10 hundred Seeds, theſe ſhedding, and diſperſed by Winds, and other Accidents, ſome will take Root, and carry on a Succeſſion.

AND in regard, it may be objected, that the Trouble and Expence, in gathering them, when in ſo diſpers'd a Manner, would be very great; and a conſtant Supply uncertain: And becauſe the Roots, if raiſed in ſuch Soils, as ſhall be found to agree with them, would thereby become larger, ſtronger, as well as cheaper, I have endeavoured the Culture, eſpecially of the *Tormentil,* and with ſuch Succeſs, as to have from each ſquare Yard three Pounds weight of the Roots.

AN Acre contains 7,840 ſquare Yards; but for Paths, Waſtes, and incloſing, I would allow, 1,800 Yards, not to be employed; as the firſt Year they will be little more than fibrous, I would allow three Years for their Growth, tho', if another Year was added, the Crop by an Increaſe would ſufficiently reward, not only as to Quantity but Quality. As the beſt of Lands are not required, I would ſtate the Expence of that Culture as follows:

Three Years Rent at 5 *s.* the Acre,	0	15	0
Plowing twice and Harrowing,	0	12	6
Planting,	0	7	6
Houghing,	1		
Digging up the Roots,	1		
Total	3	15	0

SUPPOSE each ſquare Yard, ſhould produce but the Moiety of what before was mentioned, and ſold but at three farthings the Pound, the Amount will be 27 *l.* 3 *s* 6 *d*. from whence a profit ariſeth beyond moſt of our Cultures, now in general Uſe, and the Tannage may be accompliſhed ed at about a Moiety of the preſent Expence.

PROBABLY, this Eſtimate of the Charge and Profit, may not be ſo exact as to be ſtrenuouſly defended; but if defective there is room enough for any reaſonable Addition or Deduction, without much Prejudice to the Argument; different Soils, often one and the ſame, will be attended with different Charges; The finer the Earth is made, or the more it is broken, before Planting, the better Vegetation ſucceeds. At firſt ſhooting up of the Herbage, particularly where the Ground is foul, houghing, or pulling up the large Weeds will be neceſſary, that the Growth of the *Tormentil* may not be checked; in a little Time it will clear its ſelf. As the Roots run ſuperficially downwards, not ſtriking at moſt above 5 or 6 Inches in perpendicular Depth, the Charges of digging them up cannot be ſo much, as that which attends Potatoes.

THE Propagation may be effected by planting the Crowns of the Roots, (that Part from whence the Herbage ariſeth) in either Autumn or Spring, in the ſame manner as Horſe Reddiſh, ſplitting the Crown, ſo as to leave a Bud on every Slice, then ſetting them in the Ground, about an Inch in Depth, and allowing each Sett 5 or 6 Inches ſquare of Ground. When you take up a Plantation, you will have an Abundance of ſmall Roots, that aroſe from the ſhedding of the Seed, and from the Runners, that will ſcarce be worth the Drying, but very proper for Planting: If you cut from either Extremity of the Root, a Piece of about half an Inch in length, it will grow very well. The whole Root, if cut into ſuch Pieces, may be planted. In all theſe I believe the Charge of Planting might be ſaved; if you ſcatter them before the Harrow, the paſſing of that over them, will cover them with Earth ſufficient; or,at leaſt, the moſt Part of them.

YOU may Plant the Runners, as you do Strawberries, in the afore-mention'd Seaſons and Diſtances, and conſidering the Numbers of fibrous Roots, already ſhot forth, it may be allowed the ſpeedieſt Method.

THE Seeds ripen about *Auguſt* or *September*, when ripe, they are of a browniſh Colour; as they are very apt to ſhed, the Time of ripening muſt be heedfully regarded: It would be adviſeable, to cut the Hawm or Herbage, a little time before the Seeds ripen,

pen, laying it on a Cloth or winnowing Sheet in the Sun; when dry, rub the Seeds out with your Hands, and ſeparate them from the Chaff. In *March* the Ground being prepared, you may ſow and harrow, or rake them into the Ground.

THE Cutting of the young Stems, if planted in *May* will grow.

THE Roots when collected, are to be waſhed very clean, from the Earth that will remain with them, for otherwiſe, that Dirt, when in the Layers, ſettleth into the Pores of the Hyde or Skin, and cauſeth Numbers of Spots, and Diſcolorations.

IN fair Weather, it not being a ſucculent Root, they will ſufficiently dry, if ſpread on a Floor, or a clean Part of the Field; a little Wet, will in no caſe damage them. In caſe of very wet Weather, and continued, they may be Kiln-dryed, in the ſame Manner as Bark.

WHEN dryed, they muſt be bruiſed or ground, either more or leſs, according to the Uſes deſign'd, or to the Proportion you require them to ſpend in. In caſe they ſhould not be ſufficiently waſh'd, when they are pounded, or ground a little, it would be adviſeable to ſift the Dirt, or Earth, which by this means is broken, and ſeparated from them.

WHEN thus prepared, you muſt proceed in the ſame Manner, and lay away entirely, with the ſame Circumſtances as in tanning with Bark.

IT hath often been objected. 1. That if this Method ſhould obtain, Planting would be diſcouraged, and ſo prejudice the landed Intereſt. 2. That though it is uſed in the *Canary Iſlands*, and it may be done effectually there, yet the Produce of our Country might have Qualities very different, or not exalted to ſuch a Degree, as to be of a requiſite Force.

TO theſe, I would anſwer.

1. THAT Bark would always bear a Price in Proportion to the Rate of what is ſubſtituted in lieu thereof: It would be far from being rendered uſeleſs, but only ſuffer a Diminution in Value. And that Diminution would be more than ballanced by the accelerated Growth, and worth of the Timber. At preſent, we fall our Woods ſo young, and at ſuch improper Seaſons, on

Account of the Bark, that the Timber is neither ſo good, and little more than fit for Ribberies, and Cabbins; whereas otherwiſe, was the preſent Inducement, the great Price of Bark diminiſhed, we ſhould have full, and well grown Timber, cut at a due Seaſon, and proper for Edifices, and Shipping.

THE Improvement of thoſe Lands that now are unprofitable, or not far from ſuch, would be another Ballance, if not wholly, yet in part, to the apprehended Injury.

2. THE Uſe of this Root hath not been confined to the *Canaries.* The Reverend Mr. *Lucas Jacobſon Debes*, in his Hiſtory of the Iſlands of *Feroe*, ſays Page 120, *Here groweth a huge Quantity of* Tormentil, *which the Inhabitants, having no Bark of Trees to tan their Hydes with, make Uſe of; God and Nature having revealed to them the Dryneſs of that Herb, ſo that they tan their Skins with it, and therefore call it Bark. And Page* 271. *The Men wear Shoes of Neats Leather, tanned with the Roots of* Tormentil.

THE firſt of theſe Iſlands is in the Latitude of 28, the other in 62. Yet we find the ſame Roots uſed for the ſame Purpoſes, though probably they may differ in Degrees of Power.

A great Degree of Heat is not a Quality requiſite to the Perfection of all Vegetables. *Saffron* in *France* exceeds the Produce of *Spain*, as much as the little we have in *Ireland* excells the Product of *England*.

OUR Temperate Climate ſeems in ſome Degree to be more adapted to Vegetables of this Species of Power, than thoſe that are deemed hot. Our Bark is allowed to excell the Bark of thoſe warmer Climates, as alſo our Timber.

IT is a conteſted Point, whether the *Tormentil* is not the Plant, the *Greeks* called *Britanica*; probably ſo named from its plentiful Growth in that Iſland.

ONE great Advantage ariſing from this Tannage, ſhould it become general, will be, that it will give Employment to a great many poor People, who will be ſet to work in gathering, or raiſing ſuch a Quantity of thoſe Roots, as will anſwer the preſent annual Import of Bark; as alſo the Tannage of ſome, if not the whole of thoſe Hydes, we now export unwrought; beſides the great Numbers that will be employed in the encreaſed Tannage.

THUS with as much Brevity, as the Nature of the Subject would admit of, I have given a Narrative of what I hope will be as ſatisfactory, on a candid peruſal, as I am aſſured it will be beneficial to the Publick in all its Conſequences; if the Method laid down be but purſued with common Care and Aſſiduity. It requiring no greater Skill than what at preſent is uſed in Bark Tannage; no Alterations in Forms or Utenſils.

IF the Inſtructions laid down, ſhould appear to any inſufficient, or imperfect; I ſhall always with pleaſure be ready to render them, if in my power otherwiſe. I have made a Plantation, very near this City, that if the Curioſity of any ſhould prompt them to a farther Information in that particular, there they may meet with it. As this Tannage is conſtantly carried on; it is open to the View of any that deſire it. I have ſeveral Thouſands of Pounds weight of theſe Roots by me; I never refuſing the buying of any brought to me. If any Tanner wants, he may have it at the price I gave to the Countryman, or be directed where, or how to be ſupply'd, until a Demand makes it a Market Commodity.

OUR Neceſſities, and thoſe daily encreaſing, firſt prompted to this Eſſay. The Authority of Books I have not relied on, but a Series of Experiments that employed ſeveral Years in the purſuit. If I have pointed out or cleared from Incumbrances, an advantageous Path that may leſſen the Import of Bark, extend our Tannage by our own Produce, and give a Support to any Number of Poor; I regard it in no other Senſe, than having done part of that Duty I owe to a Country, which in Gratitude I would call mine.

I might juſtly incur a ſevere Cenſure, if I ſhould conclude without teſtifying with all due Acknowledgements, a grateful Senſe of my Obligations to the Honourable *Houſe of Commons*, for the *Vote* they were pleaſed to paſs in my Favour, on the Report of the *Committee*; That I had after a full ‘ Enquiry, anſwer'd the Allegations of my ‘ Petition; and for the *Reſolution* they entred into, of Giving all proper Encouragement to ſo uſeful a Propoſal.

FAR from being inſenſible, that all new Attempts of this Kind, are apt to ſubject the Author of them, to the Name of a Projector, and render him the Object of Reproach and Suſpicion; when I was fully ſatisfied in the Facts, on which this Method is grounded; I communicated it to ſome Perſons, who are as little liable to be impos'd on themſelves, as they are above all Suſpicion of impoſing on others; under the Sanction of thoſe Characters, ſuch an Imputation would at once be removed. By their Directions I preferred my Petition, and notwithſtanding the Succeſs was not altogether ſuch as they deſired; I hope they will not deny me the indulging a ſincere Gratitude, in particularly owning the Obligations to them, who ſo warmly eſpouſed my Intereſt, grounded upon that of the Nation. I ſhall venture to ſay no more than, as I flatter my ſelf they can clear me from any Imputations of Siniſter or Mercenary Views; ſo I can promiſe my Endeavours ſhall always tend to hinder a Bluſh, for the kind Repreſentations they have been pleaſed to make in my Favour; and that I ſhall always ſtudy to approve my ſelf what is my chiefeſt Ambition to be, and what only intitles me to their Patronage;

tronage; a Pretender to no other merit, but plain dealing.

I ſhould have publiſhed this ſooner, but that I waited the Succeſs of ſome repeated, as well as new Experiments; all which on the beſt Examination I am capable of making, have tended to an entire Confirmation, That the *Tormentil* Roots Tan all Hydes and Skins as effectually, cheaper, and in leſs Time than Bark, and are eaſily propagated.

Dublin, March 1729.

BRITISH MUSEUM

POSTSCRIPT.

By the Publiſher.

IT *is neceſſary to add, that common* Tormentil (*as deſcribed before*) *grows plentifully all over* England, *by Woods, Ditches, and on hilly and barren Grounds; particularly betwixt the boarded River and* Iſlington. *And will be found in a Thouſand other Places by the diligent Enquirer.*

The Learned Parkinſon *ſays*, *from* Bellonius, '*That the Cups of* ſweet Oak *or* Acorns '*are uſed in* Greece, Aſia *the leſs*, *and* Natolia, *to* tann *and thicken their raw Hides*, '*as our Tanners uſe to do with Oak-Bark*; '*and adds*, —— I don't think but our '*Acorn-Cups* will do as much, if any 'will but make the Tryal.' —— *He ſays further*, '*that the* Turks *in* Macedonia, '*uſe the Leaves of* Sumach *for the ſame* '*purpoſe*; *thoſe in* Egypt *and* Arabia *uſe* '*the Cods of* Accacia; *in* Phrygia *and* Leſbos, *the Bark of the* Pitch Tree; *In* 'Illyria, *the leaves of the* Myrtle: *And infers*, *That as many Things may Work that Effect*, *ſeeing every Country uſeth what is familiar to it*; *therefore the beſt and cheapeſt ought to be prefer'd*, *notwithſtanding any leſs publick Conſideration.*

FINIS.

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